

WHAT IS CLAIMED IS:

1. An optical connector for use with an electro-optical board, the optical connector comprising:
a right angle interface body having one or more first optical paths and one or more second optical paths, each of the first optical paths corresponding to a respective second optical path, wherein the first optical paths are disposed in a first plane and the one or more second optical paths are disposed in a second plane, the first and second optical planes being substantially at right angles with respect to one another;

a female self-alignment body having a tapered channel substantially aligned with the first plane; and

an anchor body adapted to securely engage an exterior surface of the female self-alignment body and adapted to anchor to a surface of the electro-optical board;

a tapered male self-alignment body sized to fit closely into the tapered channel of the female self-alignment body, and having one or more third optical paths adapted to align with the first optical paths when the tapered male self-alignment body is engaged with the female self-alignment body; wherein the third optical paths are adapted for connection to one or more optical fibers disposed outside the electro-optical board, and

wherein the second optical paths are adapted for connection to optical fibers embedded in the electro-optical board.

2. An electro-optical back plane comprising:

a fiber management system formed of plural optical fibers;

an electrical bus circuit;

a board, wherein the fiber management system and the electrical bus circuit are embedded inside the board;

plural optical connectors disposed on the board, each of the plural optical connectors being coupled to one or more of the plural optical fibers of the fiber management system; and

plural electrical connectors disposed on the board, each of the electrical connectors being electrically connected to the electrical bus circuit;

wherein each of the optical connectors comprises:

a right angle interface body embedded into the board for connection to one or more fibers of the fiber management system;

an anchor body securely fastened to the surface of the board; and

a female self-alignment body having a tapered channel, wherein the female self-alignment body is held by the anchor body so that the tapered channel is in registration with an upper surface of the right angle interface body.